

ABSTRACT OF THE DISCLOSURE

Provided herein is are novel fluorine-substituted methotrexates and methods of using magnetic resonance spectroscopy of these novel compounds to determine the sensitivity
5 of or resistance of a tumor to methotrexate. Such methods may be used to predict the efficacy of methotrexate therapy or to devise alternate therapeutic strategies. Also provided are methods of treating tumors sensitive to methotrexate.